

## CLAIMS

We claim:

1 1. A computer-implemented method for bypassing I/O operations of a file system  
2 included in said computer, said computer having a computer program application that  
3 includes ordered computer code, said ordered code including I/O access commands, said  
4 file system that is optimized for queued said I/O access commands, the method  
5 comprising:

6 identifying said file system as an OS/390 UNIX Hierarchical File System;  
7 locating asynchronous direct said I/O access commands that are included in said  
8 application ordered computer code; and  
9 bypassing said file system by executing said asynchronous direct I/O access  
10 commands by use of a different file system.

11 2. The computer-implemented method of Claim 1, further comprising:  
12 including an operating system in said computer; and  
13 bypassing said queued I/O access commands when porting said application from  
14 said operating system to a different said operating system.

15 3. The computer-implemented method of Claim 1, further comprising bypassing said file  
16 system by use of an OS/390 VSAM file that is included in said different file system.

17 4. A computer-implemented method for aggregating asynchronous direct I/O access  
18 commands, said computer having a computer program application that does application  
19 I/O caching and includes ordered computer code, said each ordered computer code having  
20 at least one said asynchronous direct I/O access command that operates with said  
21 application I/O caching, said computer supporting I/O request chaining, said computer  
22 having a file system that locates storage space for said computer code on said disk, said  
23 computer that executes said computer program application, the method comprising:

24 locating said at least one asynchronous direct I/O access command;

9 associating said at least one asynchronous direct I/O access command with at least  
10 one OS/390 UNIX HFS file;  
11 associating said at least one OS/390 UNIX HFS file with at least one VSAM file;  
12 chaining said asynchronous direct I/O access command into at least one  
13 aggregated I/O access command in said computer program application;  
14 associating said at least one aggregated I/O access command with said at least one  
15 VSAM file;  
16 identifying a terminus point that is ordered in said ordered computer code;  
17 issuing said at least one aggregated I/O command until said terminus point is  
18 reached; and  
19 when said terminus point is reached and if said at least one aggregated I/O  
20 command remains, issuing a final said at least one aggregated I/O access  
21 command.

5. The computer-implemented method of Claim 4, further comprising:  
including data in said at least one asynchronous direct I/O access command; and  
including said data in said at least one aggregated I/O access command.

6. The computer-implemented method of Claim 4, further comprising allocating said  
VSAM file in single extents.

7. The computer-implemented method of Claim 4, further comprising pre-formatting  
said VSAM file.

8. The computer-implemented method of Claim 4, further comprising allocating said  
VSAM file in a named VSAM file pool.

9. The computer-implemented method of Claim 8, further comprising marking said  
VSAM file in said named VSAM file pool as free.

1 10. The computer-implemented method of Claim 8, further comprising marking said  
2 VSAM file in said named VSAM file pool as used.

1 11. The computer-implemented method of Claim 4, further comprising allocating said  
2 VSAM file in a default VSAM file pool.

1 12. The computer-implemented method of Claim 11, further comprising marking said  
2 VSAM file in said default VSAM file pool as free.

1 13. The computer-implemented method of Claim 11, further comprising marking said  
2 VSAM file in said default VSAM file pool as used.

1 14. The computer-implemented method of Claim 4, further comprising manipulating said  
2 VSAM file by a file pool utility.

1 15. The computer-implemented method of Claim 4, further comprising recovering from  
2 errors occurring while executing said at least one aggregated I/O access command.

1 16. The computer-implemented method of Claim 4, further comprising locating said at  
2 least one asynchronous direct I/O access command in a loop in said ordered computer  
3 code.

1 17. A computer system for bypassing I/O operations of a file system included in said  
2 computer system, said computer system having a computer program application that  
3 includes ordered computer code, said ordered code including I/O access commands, said  
4 file system that is optimized for queued said I/O access commands, comprising:

5 said file system as an OS/390 UNIX Hierarchical File System;

6 asynchronous direct said I/O access commands that are included in said application

7 ordered computer code; and

8 said file system that is bypassed by executing said asynchronous direct I/O access

9 commands by use of a different file system.

1 18. The computer system of Claim 17, further comprising:  
2 an operating system in said computer; and  
3 said queued I/O access commands that are bypassed when porting said application  
4 from said operating system to a different said operating system.

1 19 The computer system of Claim 17, further comprising said file system that is  
2 bypassed by use of an OS/390 VSAM file that is included in said different file system

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21 remains, a final said at least one aggregated I/O access command that is  
22 issued.

1 21. The computer system of Claim 20, further comprising:  
2 data that is included in said at least one asynchronous direct I/O access command; and  
3 said data that is included in said at least one aggregated I/O access command.

1 22. The computer system of Claim 20, further comprising said VSAM file that is  
2 allocated in single extents.

1 23. The computer system of Claim 20, further comprising said VSAM file that is a pre-  
formatted file.

1 24. The computer system of Claim 20, further comprising said VSAM file that is  
allocated in a named VSAM file pool.

1 25. The computer system of Claim 24, further comprising said VSAM file that is marked  
in said named VSAM file pool as free.

1 26. The computer system of Claim 24, further comprising said VSAM file that is marked  
2 in said named VSAM file pool as used.

1 27. The computer system of Claim 20, further comprising said VSAM file that is  
2 allocated in a default VSAM file pool.

1 28. The computer system of Claim 27, further comprising said VSAM file that is marked  
2 in said default VSAM file pool as free.

1 29. The computer system of Claim 27, further comprising said VSAM file that is marked  
2 in said default VSAM file pool as used.

1 30. The computer system of Claim 20, further comprising said VSAM file that is  
2 manipulated by a file pool utility.

1 31. The computer system of Claim 20, further comprising said executing at least one  
2 aggregated I/O access command that recovers from errors.

1 32. The computer system of Claim 20, further comprising said at least one asynchronous  
2 direct I/O access command that is located in a loop in said ordered computer code.

1 33. An article of manufacture comprising a program storage medium readable by a computer  
2 and embodying one or more instructions executable by said computer for bypassing I/O  
3 operations of a file system included in said computer, said computer having a computer  
4 program application that includes ordered computer code, said ordered code including I/O  
5 access commands, said file system that is optimized for queued said I/O access commands,  
6 wherein:

7 computer-readable program code identifies said file system as an OS/390 UNIX  
8 Hierarchical File System;

9 computer-readable program code locates asynchronous direct said I/O access  
10 commands that are included in said application ordered computer code; and

11 computer-readable program code bypasses said file system by executing said  
12 asynchronous direct I/O access commands by use of a different file system.

1 34. The article of manufacture of Claim 33, wherein:

2 computer-readable program code includes an operating system in said computer; and

3 computer-readable program code bypasses said queued I/O access commands when  
4 porting said application to a different said operating system.

1 35. The article of manufacture of Claim 34, wherein computer-readable program code  
2 bypasses said file system by use of an OS/390 VSAM file that is included in said different  
3 file system.

1 36. An article of manufacture comprising a program storage medium readable by a computer  
2 and embodying one or more instructions executable by said computer for aggregating  
3 asynchronous direct I/O access commands, said computer having a computer program  
4 application that does application I/O caching and includes ordered computer code, said each  
5 ordered computer code having at least one said asynchronous direct I/O access command that  
6 operates with said application I/O caching, said computer supporting I/O request chaining,  
7 said computer having a file system that locates storage space for said computer code on said  
8 disk, said computer that executes said computer program application, wherein:

9 computer-readable program code locates said at least one asynchronous direct I/O  
10 access command;

11 computer-readable program code associates said at least one asynchronous direct I/O  
12 access command with at least one OS/390 UNIX HFS file;

13 computer-readable program code associates said at least one OS/390 UNIX HFS file  
14 with at least one VSAM file;

15 computer-readable program code chains said asynchronous direct I/O access  
16 command into at least one aggregated I/O access command in said computer  
17 program application;

18 computer-readable program code associates said at least one aggregated I/O access  
19 command with said at least one VSAM file;

20 computer-readable program code identifies a terminus point that is ordered in said  
21 ordered computer code;

22 computer-readable program code issues said at least one aggregated I/O command  
23 until said terminus point is reached; and

24 when said terminus point is reached and if said at least one aggregated I/O command  
25 remains, computer-readable program code issues a final said at least one  
26 aggregated I/O access command.

1 37. The article of manufacture of Claim 36, wherein computer-readable program code  
2 locates said at least one asynchronous direct I/O access command in a loop in said ordered  
3 computer code.

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